

Rose Rosette Disease

by Scott Aker



Left: Rose rosette disease presents itself with red, distorted, swollen stems, as seen on this specimen of 'Ingrid Bergman'. Weedy multiflora roses, above, help spread the disease virus.

and the pest that spreads it, the rose leaf curl eriophyid mite.

The main symptom of RRD is the abnormal growth of congested clusters of stems called witches' brooms. Although the young foliage of healthy roses is usually reddish before maturing to green, the leaves on the witches' brooms are stunted and the new growth stays red. The diseased canes usually do not produce flowers. Often, there is a proliferation of thorns on the stems, but these do not harden like normal rose thorns. The virus eventually impacts the rest of the plant and ultimately kills it.

PRACTICAL CONTROL TECHNIQUES

Since RRD is caused by a virus, there is no pesticide or treatment that will cure an infected plant. It is best to monitor roses every two weeks for symptoms and remove the entire plant, including all the

STARTING about 20 years ago, the introduction of superior disease-resistant landscape roses such as the Knock Out® series created a mini gardening revolution. Hailed as high-performing, low maintenance, and virtually indestructible, millions of them were planted across the country. Unfortunately, Knock Out® roses—like many other rose varieties—now are becoming infected by a virus that causes rose rosette disease (RRD). Although there is no evidence Knock Out roses are more susceptible than other varieties, RRD is commonly seen on them simply because they are so ubiquitous.

DEADLY VIRUS CARRIED BY MITES

Rose rosette disease was first documented in 1940 in Manitoba and has been expanding its range over time, thanks to the spread of the aggressive and thorny nonnative multiflora rose (*Rosa multiflora*), which was widely planted in the last century and is now considered invasive in many areas of the country. Thriving in parts of all the lower 48 states except for the Dakotas and parts of the interior west, multiflora rose is quite susceptible to RRD, but the disease has not been effective in controlling it. Worse, multiflora rose serves as a reservoir for the RRD virus

main roots, when symptoms are noted. Infected plants should be bagged and thrown away, not composted.

Many sources advise sanitizing pruning equipment when pruning roses, but research has demonstrated the virus is not effectively transferred by anything other than the rose leaf-curl mite, which can only survive for eight hours off their rose hosts.

While miticides can reduce the mite population, the best way to foil mites is to create a barrier. Mites are about the size of a pollen grain and wingless, so they depend on air movement to transport them. Chance determines if they end up on another rose they can feed on. Studies have shown that roses separated from other roses by a barrier of dense foliage to intercept the mites are much less likely to be infected, even when high populations of rose leaf-curl mites are present nearby. A tall, dense hedge or planting of ornamental grasses intercepts mites very efficiently.

Breeding resistant roses will likely be the ultimate tool for managing RRD, but this work has just begun. Testing to determine which species are resistant was only recently completed. Many of our most widespread native roses—such as prairie rose (*Rosa arkansana*), smooth rose (*R. blanda*), and Carolina rose (*R. carolina*)—are resistant to RRD or do not develop disease symptoms when infected. Genes from these species might prove useful in developing a new line of landscape roses. No commercially available rose cultivar has been shown to be resistant to RRD.



RRD-infected canes often develop excessive, soft, reddish thorns that never turn green or harden.

Gardening Q&A with Scott Aker

GETTING RID OF BINDWEED

Last summer bindweed covered my phlox; it grew faster than I could keep up with it. What is the best way to remove it?

Field bindweed (*Convolvulus arvensis*) is aptly named. Its fast-growing stems twine around other vegetation, binding and smothering it. It is impossible to control by pulling, since it has far-reaching rhizomes that can grow as deep as 20 feet. The most effective strategy is killing it with a non-selective herbicide containing glyphosate. Move the phlox to another area when spring comes so you can spray the bindweed. You may need to spray established plants several times. You can also smother the bindweed with black plastic or cardboard, but you will have to keep the area covered for at least an entire growing season.

SICKLY BOXWOOD

I have a boxwood hedge in my Southern California garden, and I've noticed some of the plants are losing leaves in spots and dying. What can be done to stop this?

If whole plants are failing, it is likely a root problem. These plants may have been planted more deeply than others, which would make them more prone to root rot, or they may be affected by poor drainage or overwatering. Boxwood (*Buxus* spp.) resents frequent irrigation, so if nearby turf is irrigated, that should be curtailed.

If individual branches are dying, I suspect *Volutella* blight. This is common in boxwood that is sheared, and is most severe in climates with periods of high humidity. Thinning the hedge to promote air circulation, and cessation of shearing, will help control the disease. Remove enough of the outer branches—cutting them back to the spot where they join a larger branch—until you can just begin to see some of the interior branches of the hedge.

—S.A.

Send your gardening questions to Scott Aker at saker@ahsgardening.org (please include your city and state with submissions).

Geography also limits the impact of RRD. Currently, the disease does not appear to be able to spread south of about 30° North latitude—that is, the Gulf Coast, Florida, and much of Texas,

Arizona, and southern California—and it cannot easily spread in areas inhospitable to multiflora rose. In these areas, plant new roses in an area far from other roses just in case they were grown in a part of the country where RRD occurs. If plants are healthy after two seasons of growth, they can be moved into proximity with other roses.

Despite the threat of RRD, you can still successfully grow roses. The key is frequent monitoring and immediate, complete removal of infected plants. New roses from a reputable source free of RRD can be planted in the same area, since the virus does not persist in soil, but be sure to remove most of the root system of the diseased roses and allow time for the fine roots to decay before replanting.

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